

Applicant: Maurizio Valle
Application No.: 10/656,419

REMARKS

The above amendment amends claims 1, 5, and 10; cancels claims 4, 12, and 14; and adds claims 17-21. Claims 1-3, 5-11, and 13-21 are pending.

Objection and Rejection under 35 U.S.C. 112

The Action objected to claim 1 for containing an extra "and." The Amendment deletes "and" and substitute "an" therefore.

The Action also rejected claims 1 and 3 for lack of antecedent basis for two terms. The Amendment amends claims 1 and 3 to clarify antecedent..

Rejection Under 35 U.S.C. 102

The Action rejects claims 1-3 and 10-16 under 35 U.S.C. 102 as anticipated by DE 4340471 to Butz. Butz discloses a motor-driven gear changing mechanism. The Butz driving mechanism uses several sector and worm gears to transfer power from the motor to move the rear derailleur.

The Action rejected claims 1-3 over Butz, but Butz does not teach or suggest what is now claimed in claims 1-3, namely, "an electrical motor that depends from the supporting body and is operatively connected to said actuating arm through a geared transmission comprising a worm gear connected to the electrical motor, the worm gear driving and directly engaging a sector gear connected to said actuating arm," as recited in claim 1. In Butz, intermediate gears 18 and 25 transmit power from the motor 26 that turns gear 24 (not a worm gear as claimed) to the gear teeth

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16 attached to arm 9. The claimed derailleur uses two less gears, and thus has a worm gear connected to the motor that "directly [engages] a sector gear connected to the actuating arm," where Butz adds intermediate gears. Butz's intermediate gears add weight (not desirable in bicycling) and increase the number of parts that potentially need maintenance or repair.

Butz also does not teach or show the additionally recited features in claims 2 and 3, respectively: "wherein said sector gear and said actuating arm are a single unit" and "wherein said sector gear, said actuating arm and said articulated arm are a single unit." Claims 1-3 are thus believed allowable.

The Action rejected claim 4 over Butz; claim 4 is cancelled herein.

Claims 5-9 were rejected only under the double patenting doctrine, and are thus believed to be allowable as claim 5 is amended herein to include the subject matter of its base claim, and claims 6-9 depend therefrom.

Claims 10 and 11 are believed to be similarly allowable. Claim 10 recites a "transmission having a first gear connected to the electrical motor and a cooperating second gear in direct engagement with the first gear and attached to the actuating arm." This is not taught or suggested in Butz, which shows the intermediate gears, not the claimed "direct engagement."

The Action rejected claim 12 over Butz; claim 12 is cancelled herein.

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The Action did not explicitly reject claim 13 over Butz. Butz does not teach or suggest “a second externally toothed gear rigidly attached to the actuating arm” as recited in claim 13. Butz’s sector gear 21 is internally toothed, which is more difficult to machine and presents a thinner cross-section (near the lead line for reference number 21) that would be susceptible to fracture or plastic deformation. The double patenting rejection of claim 13 is discussed below.

The Action rejected claim 14 over Butz; claim 14 is cancelled herein.

The Action also did not explicitly reject claims 15 and 16 over Butz. Butz does not teach or suggest the common element in both of those claims, “such that the second gear has an axis of rotation that is substantially perpendicular to the axis of rotation of the first gear.” In Butz, the work gear 26 and the sector gear 21 have parallel axes, not the perpendicular claimed axes. The double patenting rejection of claim 16 is discussed below.¹

The Amendment adds claims 17-19, which claim a “roller bearing” not taught or suggested by Butz.

Added claim 20 claims a “drive gear that is in direct engagement with a driven gear connected to said actuating arm” that is not taught or suggested by Butz, which shows intermediate gears, not the claimed “direct engagement.”

¹ Claim 16 is not explicitly rejected over Butz or under the judicially created doctrine of double patenting.

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Added claim 21 recites the direct engagement in addition to an arrangement of elements not taught or suggested in Butz.

Double Patenting

The Action states that the pending claims and issued parent patent 6,679,797 share common subject matter including "a tapered pinion and a tapered sector gear." Action, page 5. The pending claims share some of the common elements identified, but have limitations that are non-obvious over the '797 patent. Pending claims 1, 10, 13, 15, and 16 (see Footnote 1) recite neither a tapered pinion nor a tapered sector gear, and are thus believed distinct from the claims in the '797 patent. Withdrawal of the double patenting rejection with respect to these claims is respectfully requested.

In the event that the double patenting rejection is not withdrawn, a Terminal Disclaimer is enclosed that overcomes this rejection.

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For the above reasons, Applicant respectfully submits that the presently claimed invention is patentable over the prior art. Reconsideration and allowance of the claims is respectfully requested. If the Examiner believes that an in-person or telephone interview would advance the prosecution of this application, the undersigned invites such an interview.

Respectfully submitted,

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